Final Project Design Document

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Photo editing software

Data:

Original: 2d array of int (of the size of the photo, undetermined at the moment)

Editied: 2d array of int (of the size of the photo, undetermined at the moment)

New: 2d array of int (of the size of the photo, undetermined at the moment)

X: int (for left and right (rows))

Y: int (for up and down (columns))

Size: marco for the size of the 2d arrays (going to be one for both rows and columns I just have it condensed into size for now)

UserInput: int (a choice for the menus)

Functionality:

The user is able to input a picture, that can be edited, saved, or transformed based on their choices in the menu. The user will be able to edit the photo by dimming it, cropping it, or brightening it. They will then be able to save these new file in a new location, or discard of it. Once that process is over it will bring them back to the starting menu to choose if they want to continue with a new photo, the same original photo, the photo they just outputted, or end the program.

Functions:

main()

**Data:** 2D Array for the image, 2D array for the edited image (at the start is just a copy of the original image)

**Functionality:** To house a place for all of the function calls

readPhotoInput()

**Input Parameters:** File pointer, int 2d array (original), size

**Returned Output:** None

**Functionality:** To read the imputed image from the user and put it into the 2d array so it can be used by other functions for edits and transformations.

changePhotoInput()

**Input Parameters:** int 2d array (orginal), int 2d array\* (new), size

**Returned Output:** none

**Functionality:** To change the brightness values into the corresponding characters

crop()

**Input Parameters:** File pointer, int x, int y, int 2d array (original), int 2darray\* (edited), size

**Returned Output:** none

**Functionality:** To crop the image based on specifications by the user that tells us from what pixel to what pixel the new image should be cropped too

dim()

**Input Parameters:** File pointer, int x, int y, int 2d array (original), int 2d array\* (edited), size

**Returned Output:** none

**Functionality:** This function should create an edited image where each pixel of the original image is now dimmed by one interval (one step, basically -1). It does this by going through all of the pixels in the 2D array, and lowering the value by 1.

brighten()

**Input Parameters:** File pointer, int x, int y, int 2d array (original), int 2d array\* (edited), size

**Returned Output:** none

**Functionality:** This function should create an edited image where each pixel of the original image is now brightened by one interval (one step, basically +1). It does this by going through all of the pixels in the 2D array, and increasing the value by 1.

menu()

**Input Parameters:** none

**Returned Output:** userInput

**Functionality:** to allow the user to choose what they want to do. (edit, display, or exit the program)

display()

**Input Parameters:** int 2d array (edited), int 2d array (original), int 2d array (new), size

**Returned Output:** display to screen the 2d array after its been translated

**Functionality:** This should display the image to the user, this could be the editted image or just the normal inputted image from the beginning. It does this by printing all of the cells of the 2D array.

editmenu()

**Input Parameters:** none

**Returned Output:** userInput (goes to function that user inputted)

**Functionality:** After the user selects to edit the picture, this provides them with the choices (dim, brighten, or crop). Depending on the choice this then goes directly into another function.

save()

**Input Parameters:** File pointer, char name of file, size, int 2d array (edited)

**Returned Output:** none

**Functionality:** To allow the user to save the image to a file, should prompt the user for a file name. And once saved will return the user to the first menu. It will do this by using fprintf to save the pixels from the 2D array into a file.